



#### 4.5 Rate Analysis

Rate analysis is accomplished by translating the cost of service into a cash flow demand, taking into consideration other revenues that may be utilized to address the program and increased demand for cash to address bad debt, cash reserves, bond sales expenses, offsets and credits. In addition, the unit for billing the service fee has to be established so a “fee due” can be calculated for each property. To define a fee for the recommended program of services over the five year planning period, the consultant utilized the data analysis completed in 1997, making the assumption that the “average” imperviousness by land use category (i.e., commercial, industrial, single family residential, townhomes, apartments, condos) is consistent over time. The current real estate database provides the information necessary for determining the number of parcels per land use (in 2004).

The average imperviousness for single family residential property utilized in the analysis is **3398 square feet**. This is used as the rate unit for analysis of billing units for all other property land use categories. The total number of billing units is 442,669 and is distributed as follows:

Land Use	Number of Billing Units	Percent of Total Units
Single Family Residential	172,339	39%
Multifamily Housing		
Apartments	12,175	3%
Townhomes	43,038	10%
Condos	9,812	2.5%
Mobile Homes	1,569	0.5%
Commercial	156,132	34%
Industrial	6,691	2%
Institutional	40,913	9.5%
<b>Total Billing Units</b>	<b>442,669</b>	

Properties owned by all governments has been excluded from this calculation including properties owned by the Fairfax School Board and the Fairfax Park Authority based on the enabling legislation for user-fee development. This is a conservative estimate for use in the rate analysis and results in an under-estimate the total billing units because the necessary data for an exact analysis from current conditions is not available.

Financial Factors Utilized in the Cash Flow Analysis:

- Interest earnings – 2 percent of annual cash flow
- Bad debt – 1 percent of annual cash generated by the fee
- Pro Rata appropriated funds – set at \$5,400,000 annually
- Operating reserves – 10 percent of operational expense only
- Inflation rate on operating costs – 3 percent annually
- Credits – 2 percent of cash generated annually





- Growth rate for billing units – 2 percent annually

## Cash Flow Analysis

The following table summarizes the cash flow analysis using the financial factors outlined above and based on the following assumptions:

- The rate will remain constant for two fiscal years, with adjustments in rates in FY 2009 and FY 2011.
- An update of the rate model will occur in FY 2010 to validate the program assumptions and to project the cash demands for the next five year period.

Fiscal Year	Rate per Billing Unit	
	Monthly	Annually
2007	6.46	77.52
2008	6.46	77.52
2009	7.40	88.80
2010	7.40	88.80
2011	7.95	95.40

## Cash Flow Analysis

Fairfax County Stormwater Program					
Stormwater Cost of Service Analysis/Rate Model					
Revenue/Expenditure (Cash Flow) Analysis					
	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Expenses</b>					
Annual Operating Expense	\$ 21,002,285	\$ 23,138,099	\$ 27,190,839	\$ 28,504,712	\$ 28,448,907
Annual Capital Expense and Bonded Capital Expense	\$ 15,470,000	\$ 18,070,000	\$ 18,650,000	\$ 18,650,000	\$ 23,650,000
Subtotal: with Inflation	\$ 36,472,285	\$ 41,971,656	\$ 46,738,137	\$ 48,095,368	\$ 53,037,721
Bond Sale Costs and Debt Service	\$ -	\$ -	\$ -	\$ -	\$ -
Bond Debt Service Coverage	\$ -	\$ -	\$ -	\$ -	\$ -
Operating Fund Balance and Emergency Reserve- Unappropriated	\$ 2,100,228	\$ 618,855	\$ 131,387	\$ (5,581)	\$ 93,881
<b>Total: Expenses</b>	\$ 38,572,513	\$ 42,590,512	\$ 46,869,524	\$ 48,089,787	\$ 53,131,602
<b>Other Revenues</b>					
Funds Carried Forward	\$ -	\$ 1,492,967	\$ 44,370	\$ 618,161	\$ 845,450
Bond Sales Receipts and Associated Funds	\$ -	\$ -	\$ -	\$ -	\$ -
Other Fees and Charges (Pro Rata)	\$ 5,400,000	\$ 5,400,000	\$ 5,400,000	\$ 5,400,000	\$ 5,400,000
Interest Income	\$ 420,046	\$ 462,762	\$ 543,817	\$ 570,094	\$ 568,978
Recovered Delinquencies	\$ -	\$ 332,542	\$ 388,550	\$ 396,321	\$ 434,292
Other Resources (Fees for E&S)	\$ 956,874	\$ 992,278	\$ 1,028,993	\$ 1,067,065	\$ 1,106,547
<b>Total: Other Revenues</b>	\$ 6,776,920	\$ 8,680,550	\$ 7,405,730	\$ 8,051,642	\$ 8,355,267
<b>Service Fee Revenue Requirement</b>	\$ 31,795,594	\$ 33,909,962	\$ 39,463,795	\$ 40,038,146	\$ 44,776,335
<b>Revenue Stream Reduction Allowances</b>					
Delinquencies and Bad Debt	\$ 343,181	\$ 350,045	\$ 409,000	\$ 417,180	\$ 457,150
Offsets	\$ -	\$ -	\$ -	\$ -	\$ -
Credits	\$ 686,362	\$ 700,089	\$ 409,000	\$ 417,180	\$ 457,150
<b>Total: Revenue Reduction Allowances</b>	\$ 1,029,543	\$ 1,050,134	\$ 817,999	\$ 834,359	\$ 914,300
<b>Adjusted Service Fee Revenue Requirement</b>	\$ 32,825,137	\$ 34,960,096	\$ 40,281,794	\$ 40,872,505	\$ 45,690,635
<b>Estimate of Service Fee Needed/Year</b>					
Annualized ERU Revenue Requirement	\$ 32,825,137	\$ 34,960,096	\$ 40,281,794	\$ 40,872,505	\$ 45,690,635
Number of ERU	442,700	451,554	460,585	469,797	479,193
<b>Estimated Monthly Charge per ERU</b>	\$ 6.18	\$ 6.45	\$ 7.29	\$ 7.25	\$ 7.95
<b>Service Fee Recommendation</b>					
Recommended Monthly Charge per ERU	\$ 6.46	\$ 6.46	\$ 7.40	\$ 7.40	\$ 7.95
Estimated Annual ERU Revenue	\$ 34,318,104	\$ 35,004,466	\$ 40,899,955	\$ 41,717,954	\$ 45,714,985
Estimated Year-end Revenue Surplus (Deficit)	\$ 1,492,967	\$ 44,370	\$ 618,161	\$ 845,450	\$ 24,351
<b>Available Funds for Appropriation in Following Year</b>	6.5%	0.2%	2.2%	3.0%	0.1%

